IN THE CLAIMS:

The following is a complete listing of claims in this application.

Claims 1-17 (canceled).

18. (currently amended) A multi-wavelength light-emitting diode ~~with active zones in the form of a multi-wavelength diode that emits a defined number of light wave-lengths~~, comprising a substrate (SUB) with a plurality of active zones (AZ_1-AZ_n), each of said active zones emitting ~~radiation~~ light of a different wavelength,

a first and lower ~~said~~ active zone (AZ_1) of said active zones (AZ_1-AZ_n) being grown on a surface of the substrate (SUB),

at least one upper active zone (AZ_n), and

at least one further active zone (AZ_2-AZ_{n-1}) epitaxially grown between the lower active zone (AZ_1) and the upper active zone (AZ_n),

the lower active zone (AZ_1) having a low energetic band gap and each subsequent active zones (AZ_2-AZ_n) having a higher energetic band gap than a previous active zone,

the active zones being serially connected from the lower active zone (AZ_1) to the upper active zone (AZ_n) via at least one dividing layer (TD_1-TD_n) that serves as a low impedance resistor and as a substrate for growing a further or upper active zone, the at least one dividing layer being designed as a reciprocally polar np or pn junction in the form of an isolation diode or tunnel diode, and semiconductor materials used for growing or epitaxing the isolation diodes or tunnel diodes (TD) having either an indirect band junction or an energetic band gap, which in each case is higher than semiconductor materials that are used beneath it,

wherein an absorption layer (Abs_s) is grown ~~on an~~

directly on an upper surface of at least one active zone (AZ_1-AZ_n), the absorption layer being formed of a material which is the same as a pn layer of the active zone on which the absorption layer is grown, and which adjusts intensity of light emitted by the at least one active zone on which the absorption layer is grown to ~~correspond to the intensity of other active zones~~ generate multiple photon-emission peaks of differing wavelengths with substantially equalized intensities within the multi-wavelength diode.

19. (previously presented) A light-emitting diode with active zones according to claim 18, wherein the material of the substrate (SUB) is selected from the group consisting of GaAs, Ge, InP, GaSb, GaP, InAs, Si, SiGe, SiC, SiGe:C, sapphire, and diamond.

20. (currently amended) A light-emitting diode with active zones according to claim 18, wherein the active ~~zone~~ zones (AZ_1-AZ_n) ~~contains~~ contain at least one material selected from the group consisting of GaAs, GaInP ~~(suitable compositions)~~, AlGaAs ~~(many suitable compositions)~~, GaInAs ~~(suitable compositions)~~, AlInGaP ~~(many suitable compositions)~~, GaAsN, GaN, GaInN, InN, GaInAlN ~~(suitable compositions)~~, GaAlSb, GaInAlSb, CdTe, MgSe, MgS, 6HSiC, ZnTe, CgSe, GaAsSb, GaSb, InAsN, 4H--SiC, a-Sn, BN, BP, BAs, AlN, ZnO, ZnS, ZnSe, CdSe, CdTe, HgS, HgSe, PbS, PbSe, PbTe, HgTe, HgCdTe, CdS, ZnSe, InSb, AlP, AlAs, AlSb, InAs, and AlSb.

21. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein~~, the light-emitting diode is a band emission diode which has a structure comprising~~:

~~a~~ the substrate (SUB) is GaAs or Ge ~~substrate (SUB)~~,

~~a~~ the lower active zone is a GaAs lower diode (AZ_1) grown on the substrate,

grown on top of lower diode (AZ_1), in alternating

sequence, is an isolation diode ~~grown on the GaAs diode (AZ_1)~~, followed by at least one said further active zone which is a GaInP diode (AZ_3) or Al-GaAs diode (AZ_3-AZ_n) grown on the isolation diode,

the band emission range being defined in that the number of diodes (AZ_1-AZ_n) and the number and the width of the peaks define a coincident light emission range which could not be achieved with a single peak, thus a resulting creation of an emission range.

22. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein each of the individual active zones (AZ_1-AZ_n) is equipped with a metallic contact ~~(K)~~ for connection to a connecting lead.

23. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein the light-emitting diode is a blended-color LED (brown), and wherein ~~which has a structure comprising~~:

~~a GaA~~ the substrate (SUB) is GeAs or Ge ~~substrate (SUB)~~,

~~a~~ the lower active zone (AZ_3) is made of GaInP or AlGaInP, grown on the substrate,

a first said dividing layer is grown on the lower active zone and is a first isolation diode (TD_1) made of GaInP or AlGaInP, ~~grown on the lower active zone,~~

the at least one further active zone is a center active zone (AZ_2) made of AlInGaP, grown on the first isolation diode,

a second said dividing layer is a second isolation diode (TD_2) grown on the at least one center active zone, and

~~an~~ the upper active zone (AZ_3) is made of AlInGaP, grown on the second isolation diode.

24. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein the light-emitting diode is a blended-color LED, and wherein ~~which~~

~~has a structure comprising~~:

~~a GaAs~~ the substrate (SUB) is GeAs or Ge ~~substrate (SUB)~~,

~~a~~ the lower active zone (AZ_1) is grown on the substrate, followed by two ~~additional~~ said further active zones ~~(AZ_2-AZ_n)~~, between which a tunnel diode ~~(TD_1-TD_n)~~ is arranged, with the upper active zone (AZ_n) having a metallic contact ~~(K)~~ for connection with an electrical terminal.

25. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein the lower active zone (AZ_1) is made of an AlInGaP material having a wavelength of approximately 620 nm, the ~~center~~ at least one further active zone (AZ_2) is made of an AlInGaP semiconductor material having a wavelength of approximately 550 nm, and the upper active zone (AZ_3) is made of a GaInN semiconductor material having a wavelength of approximately 400 to 450 nm.

26. (currently amended and withdrawn) A light-emitting diode with active zones according to claim 18, wherein the upper active zone (AZn) has a contact ~~(BK)~~ which is a bond contact.

27. (previously presented and withdrawn) A light-emitting diode with active zones according to claim 18, wherein the light-emitting diode with the active zones forms a colored display.

28. (previously presented and withdrawn) A light-emitting diode with active zones according to claim 27, wherein the colored display is formed from a plurality of said light-emitting diodes, one pixel of the colored display corresponding to a light-emitting diode, and each pixel and the corresponding colors being selectively activated.